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KNOWLEDGE, ATTITUDE AND PRACTICE OF LECTURE NOTE-TAKING STRATEGIES AMONG SUDANESE MEDICAL LABORATORY STUDENTS

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ABSTRACT

This is a descriptive cross-sectional KAP study, conducted on Sudanese medical laboratory students, aimed at evaluating their knowledge, attitude, and practice of lecture note-taking strategies. A questionnaire was designed, including demographic along with other data regarding lecture note-taking strategies. In this study, all medical laboratory students form different university students invited to participate voluntarily, data was collected and analyzed. **Result:** Out of 682(100%) respondents, 608(89%) were note-takers and the remaining 74(11%) were non note-takers, on the other hand, 376(55%) of respondents preferred receiving handouts instead of taking note. Regarding the strategies used by students, from (n=608) note-takers, 410(67%) use their own expression, 198(33%) write same words of instructor, 395(65%), 585(96%), 362(53%), 383(63%) and 293(48%) were using abbreviations, writing subtitle, leaving margin, using arrows and writing lecturer's name & date respectively. In this study, the respondents were classified into three groups depending on information retention (LIR, MIR and HIR) groups, accordingly the LIR were 95(14%), MIR were 474(69%) and HIR were 113 (17%). A higher information retention was observed in those who use own words, write subtitles, and using abbreviation as strategies of writing lecture note, p value <0.05. **In conclusion:** the results concluded that, A high information retention was observed in those who revise lecture notes in the 1st 24hrs and (using their own words , using arrows, abbreviations, writing subtitles and date, leaving margins) while taking lecture notes. There are no differences between the awareness of Cornell's method and any other individualized method .

KEYWORD: taking note, strategies of note taking, Cornell's method.

1. INTRODUCTION:

Taking lecture notes is widely accepted as a useful procedure for augmenting student's attention and retention of information.[1] It has been suggested that the action of note-taking benefits the learner by activating attention and facilitating long term memory. A positive correlation has been found between amount of information recorded in lecture notes and exam performance.[2,3]

The skills of note-taking are rarely taught in university, so most of students must develop their own note-taking methods deciding for themselves how much, and what kind of information they should record.[3] The few amount of information included in most student's lecture notes implicates a real need for further studies in note-taking skills. The frequent failure to record even the main points of the lectures, further emphasize the need to help these students to differentiate the important information from the less important ones.[3] Saying words is a quicker procedure ten times than writing it, so the student can't cope without he develops specific techniques or strategies for that, e.g., using abbreviations, arrows, truncating long words, and leaving margins are very helpful strategies in note-taking process.[4] Cornell's method is considered a good method of taking note; it provides a systematic format for condensing and organizing notes. The student divides the paper into two columns: the note-taking column (usually on the right) is twice the size of the questions/key word column (on the left). The student should leave five to seven lines, or about two in (5 cm), at the bottom of the page,[5] within the first 24 hours of taking the notes, the student must revise and write questions and then write a brief summary in the bottom five to seven lines of the page **figure 1**. This will increase the information retention (IR) of the student.[6]

Some students try to record all of what have been said in the lectures by developing variable individualized methods; while others choose a known method like Cornell's method, which allows the students to listen think and organize the note paper.[7] A study reported that student implementing Cornell's methods have 10-12% higher average from students implementing their own methods. [4] New studies recommended providing outlined or uncompleted handouts to students before the lecture to ensure that they are aware of the most important points of the lecture material and to ensure that the students take an active role in listening, understanding, recording and learning of the information.[8]

Note-taking is a complex process that combines comprehension and writing action simultaneously, and this is such a complicated processes which depend mainly on working memory, i.e., as the student is listening, the information should held on the working memory long enough to write it down.[9]

Objectives: The present study aimed at evaluating knowledge, attitude, and practice of lecture note-taking among Sudanese medical laboratory students, and to find out its correlation with information retention when revising the notes within the first 24hrous.

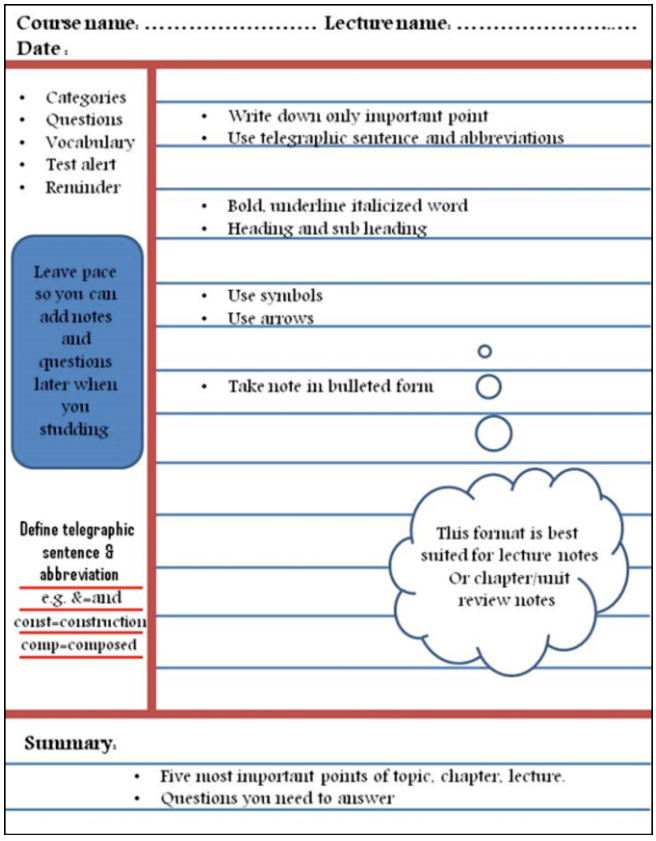

Figure 1: Cornell's Method for taking notes

Adapted from: *How to Study in College 7/e by Walter Pauk, 2001 Houghton Mifflin Company.*

2. STUDY DESIGN AND METHODOLOGY:

This is a descriptive cross-sectional KAP study carried out in Khartoum state, Sudan, during the month of November 2016. A total of 682 medical laboratory students from different universities were involved. Targeted students were invited to fill an anonymous self-administered questionnaire, which was consisted of both open-ended and close-ended questions, including data regarding knowledge, attitude and practice of taking lecture notes.

For the purpose of the study, certain terms were defined, e.g., lecture note-taking: defined as using papers and pen to write down information in lectures, information retention (IR) was defined as the response of students to the question of how much knowledge you could retain when revising the lecture note in the first 24 hours, accordingly; we classified all respondents into three groups depending on IR, less than 50%=Low information retention (LIR), 50-70%= medium information retention MIR) and more than 70%=high information retention (HIR) group. Eventually data was collected and statistical analysis was performed using SPSS program version (IBM 20), frequencies and correlations were derived, variations were determined by using Qui-square test, level of significance was set at P Value less than 0.05.

3. RESULTS:

In this study, out of 682(100%) respondents, 608(89%) were note-takers and the remaining 74(11%) were non note-takers, on the other hand, 376(55%) of respondents preferred receiving handouts instead of taking notes.

Regarding strategies used by students, from (*n*=608) note-takers, 410(67%) use their own expression and 198(33%) write the same words and expressions said by the instructor. Additionally 395(65%), 585(96%), 362(53%), 383(63%) and 293(48%) of note-takers were using abbreviations, writing down the subtitle, leaving margin, using arrows and writing down the lecturer's name and date respectively, **figure (2).**

On considering the awareness of Cornell's method, of 608(89%) lecture note takers, 31(5%) were aware of Cornell's method and 577(95%) were not and statistically no significant differences were detected in the strategies used by two the groups, **figure (3)**.

As described in **Table (1),** the respondents were classified into three groups depending on information retention (LIR, MIR and HIR) groups, accordingly the LIR were 95(14%), MIR were 474(69%) and HIR were 113 (17%). Besides that, from 95(14%) LIR group, 9(2%) were aware of Cornell's and 86(13%) were not, furthermore, from 474 (69%) MIR group, 22(3%) were aware of Cornell's method and the remaining 452(66%) were not. Surprisingly, a higher percentage of HIF were observed in those who were not aware of Cornell's method.

When the HIR group *(n=113)* were correlated with the strategies used, we found the information retention is higher in those who write subtitles (93/113), use own words and expression (75/113) and using abbreviation (74/113) as strategies of writing lecture note, *p. value less than 0.05*. **Table (2).**

Table 1: Correlation of Awareness of Cornell's method with information retention.

Result		Information retention			Total
		LIR	MIR	HIR	
Awareness of Cornell's Method	Yes	9(2%)	22(3%)	5(1%)	36(4%)
	No	86(13%)	452(66%)	108(16%)	646(95%)
Total		95(14%)	474(69%)	113(17%)	682(100%)

***P-Value < 0.05*

Table 2: Correlation of strategies used by students with high information retention

Result		HIR group >70% information retention (n=113)			
		Yes	No	To some extend	Total
Strategy used by note-takers	Using own words and expression	74	4	35	113
	Using abbreviations	75	18	20	113
	Using arrows	66	21	26	113
	Writing subtitles	93	9	11	113
	Writing the date	50	38	25	113
	Leaving margins	56	33	24	113

***P-Value < 0.05*

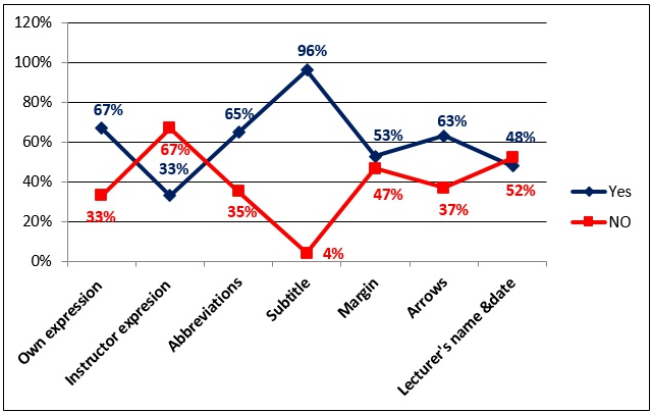

Figure 2: Description of strategies used by note-takers

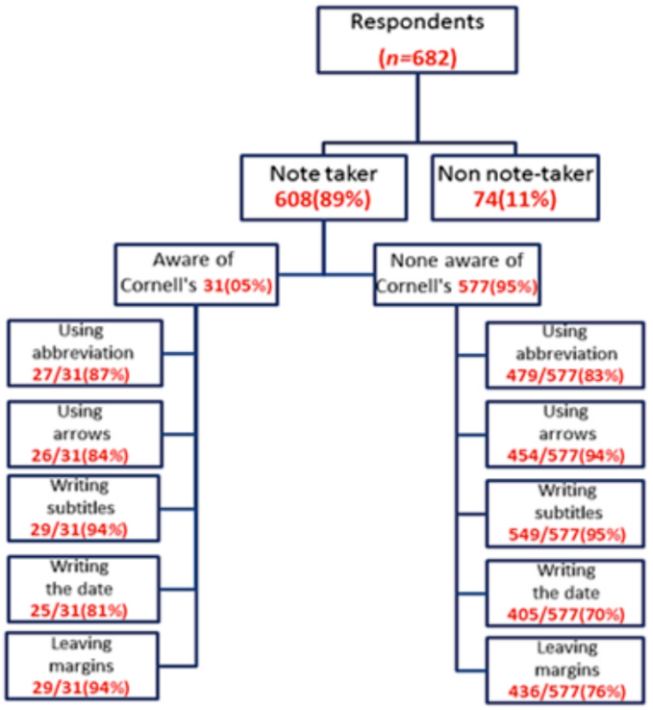

Figure 3: Description of the strategies used by students who were aware and those who were not of Cornell's method

4. DISCUSSION:

As indicated in our results, the majority of students (89%) were note-takers, and 11% were non note-takers, this is a higher than findings reported in a study carried by Robert and Alan (2002).[7] However this could be explained by either; the rapid lecturer's teaching style or poor note-taking skill of the students.[6,9]

On the other hand (55%) of respondents prefer to receive handouts than to take lecture notes, this may be because, it is an easy and simple process, thus; many studies recommended to give the students incomplete outlined handouts before the lectures, which proved to be effective and correlated with high information retention when revised within the 1st 24hrs.[10,11]

In this study, (95%) of note-takers were not aware of Cornell's method, despite of that, they were using one or more of strategies that used by those who were aware of Cornell's method, this finding agrees with Lori et al,[12] they reported that, no differences between Cornell's method and any other individualized note-taking methods in the exam performance, also another study revealed that high exam performance is not related to the method of note-taking rather than to the way of revising them [3,13]

Moreover; our study showed significant correlation between the strategies used by students and their high information retention, *P-Value < 0.05*, this findings were consistent with what were reported in study carried by Charles et al (1994),[2] Linda et al (1985)[3], Nigel et al(2003)[14]

There are some limitations in this study that should be considered for further studies:

- 1st the exam performance of note- takers was not estimated in this study,
- 2nd lecturer controlled variables (e.g., lecture speed, degree of organization) on students' note quality were note assessed.

5. CONCLUSION:

The result of this study concluded that; A high information retention was observed in the group that revise the lecture notes in the 1st 24hrs and (using their own words , using arrows, abbreviations, writing subtitles and date, leaving margins) while taking lecture notes. There are no differences between the awareness of Cornell's method and any other individualized method if they use one or more components of Cornell's methods, despite they aware of Cornell's method or not moreover non note-takers were a remarkable high percentage.

6. RECOMMENDATIONS:

The authors recommended that, teaching style should be improved and the students should know which is important and which is not. Also strongly recommended to teach the students various strategies of note taking earlier in the university, and to give them incomplete handouts contain only the outlines which can be filled in the lectures.

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